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An unending variety of topics

Thursday, February 09, 2006

The Roundhead Revolution?

Gregory Clark (via Marginal Revolution) has a new and more comprehensive data set on real wages in England from 1209 to the present. Up to about 1600, it is consistent with the Malthusian theory that real wages varied inversely with population. But then from at least 1630, there is a remarkable and unprecedented departure from the Malthusian curve formed by the ratio of real wages to population. Real wages rose over 50% from 1630 to 1690 despite rising population. There is then a stable period from 1730 to 1800 with a new curve parallel to but offset from the original Malthusian curve, and then a second startling departure from 1800 to today reflecting the end of this last Malthusian epoch (ironically just as Malthus was writing).

This data contradicts the idea that nothing remarkable

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Nick Szabo

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happened to the economy before the industrial revolution got going in the late 18th century. It also contradicts the theory that a qualitative shift occurred due the the Glorious Revolution of 1689 in which Parliament gained more power, some Dutch financial pratices were introduced, and soon thereafer the Bank of England founded.

Rather, the theory that comes most readily to mind to explain an economic revolution in 17th century England is the rather un-PC theory of Max Weber. I'll get back to that, but first Clark debunks the theory of Becker et. al. regarding family investment. According to this theory, parents choose between the strategy of having a large number of children and having a small number of children in whom they invest heavily, teaching them skills. This is basically the spectrum between "R strategy" and "K strategy" along which all animals lie, except that with humans there is a strong cultural component in this choice (or at least Becker et. al. claim or assume that family size has always been a cultural choice for humans -- see my comments on this below).

According to this family investment theory, until quite recently (perhaps until the industrial revolution) having more children was the better bet due to lack of reward for skill, and overall underdevelopment of the economy limited the reward for skill, so the world was caught in a Malthusian trap of unskilled labor. However at this recent point in history rewards for skilled labor went up, making it

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worthwhile for parents to invest in skills (e.g. literacy). Clark's data contradicts this theory: his data show that the ratio of wages for skilled to unskilled laborers did not rise either in the 17th century revolution or during the industrial revolution, and actually were in substantial decline by 1900. Indeed, a decline in demand for skilled labor is what Adam Smith predicted would happen with increasing specialization in manufacturing. Thus, there was no increase in reward for skill investment which would have pulled us out of the Malthusian trap. Thus, Clark also rejects the family investment theory.

I think, however, that part of the family investment theory can be rescued. Clark's and other data on literacy demonstrate a substantial rise in literacy just prior to and at the initial stages of the qualitative change in productivity. Literacy in England doubled between 1580 and 1660. Parents were in fact making substantial investments in literacy despite an apparent lack of incentive to do so. Why?

My own tentative theory to explains Clark's data combines Becker, Weber, and the observations of many scholars about the cultural importance of printing. Printing was invented in the middle of the 15th century. Books were cheap by the end of that century. Thereafer they just got cheaper. At first books printed *en masse* what scribes had long considered to be the classics. Eventually, however, books came to contain a wide variety of useful information important to various trades. For example, legal cases became much more thoroughly recorded and far more easily accessible, facilitating development of the common law. Similar revolutions occurred in medicine and a wide variety of trades, and undoubtedly eventually occurred in the building trades that were the source of Clark's data.

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Printing played a crucial role in the Reformation which saw the schisms from the Roman Church and the birth in particular of Calvinism. The crucial thing to observe is that, while per Clark the gains from investment in skills did not increase relative to unskilled labor, with the availability of cheap books and with the proper content the costs of investing in the learning did radically decrease for many skills. Apprenticeships that used to take seven years could be compressed into a few years reading from books (much cheaper than bothering the master for those years) combined with a short period learning on the job. This wouldn't have been a straightforward process as it required not just cheap books with specialized content about the trades, but some redesigning of the work itself and up-front investment by parents in their children's literacy. Thus, it would have required major cultural changes. That is why, while under my theory cheap books were the catalyst that drove mankind out of the Malthusian trap, many institutional innovations, which took over a century to evolve, had to be made to take advantage of those books to fundamentally change the economy.

Probably the biggest change required is that literacy entails a very large up-front investment. In the 17th century that investment would have been undertaken primarily by the family. Such an investment requires delayed gratification -- the trait Weber considered

crucial to the rise of capitalism and derived from Calvinsim. However, Calvinist delayed gratification under my revised theory didn't cause capitalism via an increased savings rate, as Weber et. al. postulated, but rather caused parents to undertake a costly practice of investing in their children's literacy. Once that investment was made, the children could take advantage of books to learn skills with unprecedented ease and to skill levels not previously possible. So the overall investment in skills did not increase, but instead the focus of that investment shifted from long apprenticeships of young adults to the literacy of children. At the same time, the productivity of that investment greatly increased, and the result was overall higher productivity.

Investment in literacy would have both enabled and been motivated by the famous Protestant belief that people should read the Bible for themselves rather than depending on a priest to read it for them. This process would have started in the late 15th century among an elite of merchants and nobles, giving rise to the Reformation, but might not have propagated amongst the tradesmen Clark tracks until the 17th century. It is with the spread of Huguenot, Puritan, Presbyterian, etc. literacy culture to tradesmen that we see the 17th century revolution in real wages and the first major move away from the Malthusian curve.

This theory that the Malthusian trap was evaded by a sharp increase in the productivity of skill investment explains why population growth did not fall in the 17th century as Becker et. al. would predict. Cheap books substantially lowered the cost of skill investment, so the productivity gains could come without increasing the overall investment in skills and thus without lowering family size.

The family size/skill investment tradeoff is more likely to explain the second and sharper departure from Malthusian curve starting around 1800. However again I think Becker is wrong insofar as this was not due to an increase in returns on skill (Clark's data debunks this), but due to (1) technology improving faster than humans can have children, and (2) the rise of birth control (without which there is little control by choice or culture over family size -- no cultural family size choice theory really works before the widespread use of birth control).

The catalyst in moving away from the Malthusian curve was thus not, per Becker et. al., an increase in the returns on investments in skills, but rather a decrease in the costs of such investments once cheap books teaching specialized trades were available and the initial hill of literacy was climbed by Calvinist families. If the Calvinist literacy-investment theory ("The Roundhead Revolution") is true, we should see a similar departure from the Malthusian curve at the same time or perhaps even somewhat earlier in the Netherlands, and also in Scotland, but probably not in Catholic countries of that period.

Posted by Nick Szabo at 6:34 PM

6 comments:

Mike Huben said...

I'm truly ignorant about the economics of this era, but I do have a few questions.

Have the effects of employable men leaving for the colonies and other parts of the empire, while wealth is flowing in, been accounted for? Between deportation, emmigration, and the armed forces, I'd guess there'd be a substantial labor shortage which could drive up wages across the board.

Additional public health factors could also have depressed labor supply, such as the gin epidemic.

Could the advent of chattel slavery also have affected the statistics? Not by changing the supply of labor much, but by displacing lower wage labor with labor that is not counted in the statistics? (I doubt it, but I don't know enough.)

6:32 AM

Anonymous said...

A labor shortage and influx of precious metals would simply create inflation, which would leave real wages flat. If population had actually dropped substantially as in the Black Plague, agricultural productivity would have increased (marginal lands could be abandoned), but British population was growing rapidly during this era despite the emigration.

Imports of luxury goods wouldn't effect Clark's index for the cost of living for tradesmen significantly. There were no vast imports of grains or meat or commoner's clothing, so the cost of living for these tradesmen wasn't substantially lowered by cheap imports. This in contrast to what is happening with imports from Asia to the U.S. today, which have worked to increase real wages versus other factors such as housing costs that have worked to lower them. It is amazing that Clark weighs housing costs at only 5% when today in the U.S. they can account for 50% of the cost of living.

There was practically no chattel slavery in Britain itself during this era. Overseas slaves wouldn't have displaced domestic tradesmen such as the construction workers in Clark's sample.

For all these reasons, the productivity gains leading to higher real wages for tradesmen in this era had to be indigenous.

4:02 PM

Jannia said...

no cultural family size choice theory really works before the widespread use of birth control

That assumes that infanticide is rare or never occurs, which given what we know/believe about birthrates vs population growth vs mortality due to accident and disease in primitive societies is a fairly unsound assumption.

Family size can be as easily be controlled by not calling a healer for the newborn's latest illness, or by not feeding it enough, as by preventing it from having been born in the first place.

3:57 PM

Neil Craig said...

I think Holland must have had a higher standard of living before England but Scotland didn't. Scotland was notoriously poorer than England - this was from the Scots side the reason for Union - but Scotland did, at least in the Lowlands have a considerably better reading level than the English (they were more enthusiasticly Protestant), which explains why, after the Union Scotland was able to quickly catch up with England & indeed become probably the most industrially advanced area while Scots individually played a relatively strong role in most fields (I am a Scot but don't think I am overplaying this).

This suggest that free trade & capitalism, available early to the centrally located Dutch but not the peripheral Scots may have a major effect.

11:02 AM

Nick Szabo said...

Holland, and in particular Amsterdam, did indeed have a small head start on capitalist institutions, and possibly a bit of head start on rising literacy, and had the first large-scale joint stock company, the Dutch East India Company. Holland inherited much from the long history of textile manufacturing and commodity trading in the Low Countries (mostly in what is today Belgium, before the Reformation war for secession from Spain gave rise to Amsterdam).

8:50 PM

Evan Palmer said...

Another factor that may come into play during this time period.. wasn't there a mini-ice-age which affected food production, etc.. so there would have been a rebound when its effects diminished? if so, part of the equation could be: "more food = more productivity.

8:48 AM

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